

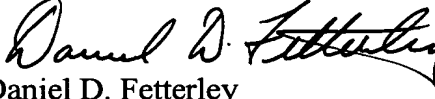
Appln. No. 10/813,563  
Preliminary Amendment dated August 12, 2004  
Reply to Notice to File Missing Parts of June 15, 2004

**REMARKS/ARGUMENTS**

Entry of this Preliminary Amendment is respectfully requested.

Respectfully submitted,

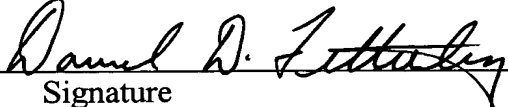
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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Mail Stop - No Fee, P.O. Box 1450, Alexandria, VA 22313-1450 on the 12<sup>th</sup> day of August, 2004.

Daniel D. Fetterley	20,323
Name	Reg. No.
	8/12/04
Signature	Date



## ABSTRACT

A medical X-ray device 5 arrangement for producing three-dimensional information of an object 4 in a medical X-ray imaging comprises an X-ray source 2 for X-radiating the object from at least two different directions; a detector 6 for detecting the X-radiation to form projection data of the object 4; a computational device 15 for modelling the object 4 mathematically utilizing the projection data to solve the imaging geometry and/or the motion of the object, where the solving concerns either some or all parts of the imaging geometry and/or the motion of the object. The computational device 15 utilizes said projection data and said mathematical modelling of the object in Bayesian inversion based on Bayes' formula

$$p(x, \theta | m) = \frac{p_{pr}(\theta) p_{pr}(x) p(m | x, \theta)}{p(m)}$$

to produce three-dimensional information of the object.

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**Amendments to the Drawings:**

The attached sheet of drawings showing Fig. 9 replaces the original sheet including Fig. 9.

Attachment: Replacement Sheet